

These duplet and quadruplet groups—respectively, two and four notes played in the space of three—may also be notated as dotted notes (shown in brackets).

Sometimes, especially when transcribing solos, it is convenient to decide, for example, that a musician has played seven notes in the



The reality is that the player (probably a jazz musician) has executed a quick burst of ascending notes at the fastest speed his fingers will allow, and seven of these fast notes happen to last about one beat. If a whole ensemble were to repeat such a rhythm for a few beats, the listener's impression would be that the music had changed tempo!

Polyrhythms and Rhythmic Cycles

What happens if we play in two time signatures simultaneously? We get fired by our record company, but that's not the whole story. Interesting and unusual rhythmic textures can be produced by overlaying a repeated rhythmic pattern over another of a different metre. The patterns may be of any length you choose, but they must share the same basic pulse and be played at the same tempo!

To illustrate this musical idea, here are two patterns of different length:



The first is seven beats long, the second only five beats long. Obviously, if we play them together at the same tempo, the 5/4 pattern

will finish before the 7/4. However, to keep the ball rolling, we simply repeat the 5/4. When the 7/4 pattern finishes, we repeat that, without dropping a beat . . . the two patterns thus repeat indefinitely, their start points getting more and more out of sync, but held together by their common quarter note pulse.

To hear how this sounds, you need either two musicians (preferably of the patient and willing variety—avoid heavy rock bass players) or a MIDI sequencer. The music's main effect is to obliterate the bar line with a nebulous swirl of notes, but despite the feeling of dislocation, the ever-changing, shifting rhythmic textures produced are quite delightful. The overall pattern is not entirely unpredictable: after the 7/4 pattern has played five times and the 5/4 pattern seven times, we arrive back at the beginning, having completed one rhythmic cycle. Such rhythmic exercises, where different metres are superimposed, are called *polyrhythms*.

I'll leave you with two more examples of polyrhythms which you may like to try out on a rainy day. The first is a combination of two double-handed keyboard patterns, one in 12/8, the other in 11/8. Both use the right hand to play off-beats in between the left hand's beats, but the 11/8 skips an offbeat as it returns to the beginning.

The image contains two musical staves. The first staff is in 12/8 time, with a tempo marking of a quarter note = 140. It is labeled "(Play 11 times)". The notation shows a sequence of chords: G4, A4, B4, C5, B4, A4, G4. There is a "7" above the first and last notes. The second staff is in 11/8 time, also with a tempo marking of a quarter note = 140. It is labeled "(Play 12 times)". The notation shows a sequence of chords: G4, A4, B4, C5, B4, A4, G4. There is a "7" above the first and last notes.

The overlapping note ranges require careful hand positioning—try placing the right thumb over the left! If you are playing these parts on a keyboard or workstation with sampled instrument sounds, a soft marimba program with a little release decay* will work well.

**Keyboard programmer's term for the portion of a sound which, after the fingers have been lifted, sustains for a short while, then dies away.*

My final polyrhythm is one of the first pieces of music I ever wrote. These are two keyboard patterns, the first (in 17/8) with a chiming quality, the second (in 11/8) a slightly jazzy riff with a see-sawing bass line. (The latter may be played by guitar and bass if any band is brave enough to try it!) As you will have worked out by now, a full cycle is completed when the first pattern has been played eleven times and the second seventeen times. That gives plenty of opportunity for things to go wrong, but while gritting your teeth during the fourteenth reiteration of the 11/8 riff, console yourself with the thought that by the end of the cycle, every possible vertical juxtaposition of the two patterns' notes will have sounded.

The image shows two musical examples. The first is a 17/8 time signature piece with a tempo of 140, consisting of two staves of music. The second is an 11/8 time signature piece with a tempo of 140, also consisting of two staves. The second piece includes chord markings: (Bm7), C#m7, and Bm7 (x17), and a repeat sign at the end.